

RF Exposure Report (FCC)

Report No.: FCC_RF_SL21022601-HAR-283_MPE_Rev 1.0

FCC ID: 2AHPN-BE2860

Model: R1 EXT NA 3B

Received Date: 3/15/2021

Test Date: 4/15/2021-5/23/2021

Issued Date: 7/23/2021

Applicant: HARMAN INTERNATIONAL

Address: 30001 Cabot Drive, Novi, MI 48377, USA

Manufacturer: HARMAN INTERNATIONAL

Address: 30001 Cabot Drive, Novi, MI 48377, USA

Issued By: Bureau Veritas Consumer Products Services, Inc.

Lab Address: 775 Montague Expressway, Milpitas, CA 95035

**FCC Registration /
Designation Number:** 540430 / 4842D



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Release Control Record

Issue No.	Description	Date Issued
FCC_RF_SL21022601-HAR-283_MPE	Original Release	6/14/2021
FCC_RF_SL21022601-HAR-283_MPE_Rev 1.0	Update the standard	07/23/2021

1 Certificate of Conformity

Product: Automotive Infotainment Unit

Brand: HARMAN

Model: R1 EXT NA 3B

Sample Status: Final Product

Applicant: HARMAN INTERNATIONAL


Test Date: 4/15/2021-5/23/2021

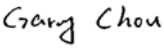
Standard: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : , **Date:** 7/23/2021
Jude Semana / Test Engineer

Approved by : , **Date:** 7/23/2021
Gary Chou/ Engineer Reviewer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as Mobile Device.

2.4 Calculation Result of Maximum Conducted Power

Type	Frequency Band (MHz)	Max Power (dBm)	Max Power (mW)	Turn-Up Tolerance	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
BT-BDR	2441	5.29	3.38	± 1dB	1.43	20	0.001177	1
2.4GHz WLAN	2462	20.05	101.157	± 1dB	1.43	20	0.035233	1
5GHz WLAN	5180	7	5.01	± 1dB	2.60	20	0.002285	1
5GHz WLAN	5775	11.92	15.559	± 1dB	2.60	20	0.007095	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The External antenna type is PCB antenna with 1.43 dBi gain for BT-BDR/2.4GHz WLAN and 2.6 dBi gain for 5GHz WLAN.

3 Conclusion

Therefore the maximum calculations of above situations are less than the “1” limit.

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